AMENDMENT TO THE CLAIMS

The listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Cancelled)

2. (Currently Amended) A plasma processing apparatus for processing a substrate, comprising:

a plasma processing chamber with chamber walls;

a substrate support within the chamber walls;

at least one confinement ring within and spaced apart from the chamber walls, wherein the confinement ring and the substrate support define a plasma volume; and

a magnetic source for generating a magnetic field for magnetically enhancing physical confinement provided by the at least one confinement ring, the magnetic field not having a strength to magnetically confine a plasma,

wherein the magnetic source comprises a first magnetic element spaced apart from and placed on a first side of the at least one confinement ring, so that the first magnetic element is closer to the substrate support than the at least one confinement ring, and a second magnetic element spaced apart from and placed on a second side of the at least one confinement ring, so that the second magnetic element is farther from the substrate support than the at least one confinement ring, wherein magnetic field lines passing from the first magnetic element to the second magnetic element pass through the confinement ring.

3. (Previously Presented) The plasma processing apparatus, as recited in claim 2, wherein the magnetic source is configured such that the magnetic field passing through the at least one confinement ring increases collisions of charged particles with the at least one confinement ring.

4. (Cancelled)

5. (Previously Presented) The plasma processing apparatus, as recited in claim 3, wherein the first magnetic element forms a ring shape with a diameter and the second magnetic element forms a ring shape with a diameter, and wherein the at least one confinement ring has an inner diameter and an outer diameter, wherein the diameters of the first magnetic element and the second magnetic element are less than the outer diameter of the at least one confinement ring and greater than the inner diameter of the at least one confinement ring.

6. (Original) The plasma processing apparatus, as recited in claim 5, wherein the diameter of the first magnetic element is not equal to the diameter of the second magnetic element.

7. (Previously Presented) The plasma processing apparatus, as recited in claim 2, wherein the magnetic fields pass through the region of the at least one confinement ring.

8. (Previously Presented) The plasma processing apparatus, as recited in claim 7, wherein the first magnetic element forms a ring shape with a diameter and the second magnetic element forms a ring shape with a diameter, and wherein the at least one confinement ring has an inner diameter and an outer diameter, wherein the diameters of the first magnetic element and the second magnetic element are less than the inner diameter of the at least one confinement ring.

9. (Original) The plasma processing apparatus, as recited in claim 2, wherein the confinement ring is movable to define a variable gap, wherein the variable gap is used to vary pressure in the plasma volume.

10. (Original) The plasma processing apparatus, as recited in claim 9, wherein the first magnetic element and second magnetic element do not cross the variable gap.

11. (Withdrawn) A method for processing a substrate, comprising:

placing the substrate in a process chamber;

providing a gas from a gas source to the process chamber;

generating a plasma from the gas in the process chamber;

flowing the gas through a gap adjacent to at least one confinement ring to provide physical confinement of the plasma; and

providing magnetic confinement of the plasma to enhance the physical confinement of the plasma.

12. (Withdrawn) The method, as recited in claim 11, wherein the providing the magnetic confinement, comprises providing a magnetic field in the region of the confinement rings.

13. (Withdrawn) The method, as recited in claim 12, wherein the magnetic field increases collisions of charged particles with the confinement rings.

14. (Withdrawn) The method, as recited in claim 12, wherein the magnetic field passes through the at least one confinement ring.

15-17 (Cancelled)

18. (Previously Presented) The plasma processing apparatus, as recited in claim 2, wherein the first magnetic element has a pole from a north pole of the first magnetic element to a south pole of the first magnetic element, wherein the pole of the first magnetic element has a direction that extends between a chamber top to a chamber bottom and wherein the second magnetic element has a pole from a north pole of the second magnetic element to a south pole of the second magnetic element, wherein the pole of the second magnetic element has a direction that extends between the chamber top to the chamber bottom.

19. (Previously Presented) The plasma processing apparatus, as recited in claim 2, wherein the confinement ring has sides that form largest surfaces of the confinement ring wherein the magnetic field lines passing from the first magnetic element to the second magnetic element pass through the sides of the confinement ring that form largest surfaces of the confinement ring at an angle between being perpendicular to 45° with the sides of the confinement ring that form largest surfaces of the confinement ring.

20. (Previously Presented) The plasma processing apparatus, as recited in claim 2, wherein the at least one confinement ring, comprises a first confinement ring and a second confinement ring spaced from the first confinement ring, wherein the first magnetic element is placed on a first side of the first confinement ring and second confinement ring and is closer to the first confinement ring than to the second confinement ring and the second magnetic element is placed on a second side of the first confinement ring and second confinement ring and is closer to the second confinement ring than to the first confinement ring, and wherein magnetic field lines passing from the first magnetic element to the second magnetic element pass through the first confinement ring and the second confinement ring.

21. (Previously Presented) The plasma processing apparatus, as recited in claim 20, wherein the first magnetic element has a pole from the north pole of the magnetic element to the south pole of the magnetic element, wherein the pole of the first magnetic element has a direction that extends from the first confinement ring to the second confinement ring.

22. (Previously Presented) The plasma processing apparatus, as recited in claim 21, wherein the confinement ring has sides that form largest surfaces of the confinement ring wherein the magnetic field lines passing from the first magnetic element to the second magnetic element pass through the sides of the confinement ring that form largest surfaces of the confinement ring at an angle between being perpendicular to 45° with the sides of the confinement ring that form largest surfaces of the confinement ring.

23. (Previously Presented) The plasma processing apparatus, as recited in claim 2, wherein the first magnetic element and the second magnetic element are within the chamber walls.

24. (Previously Presented) The plasma processing apparatus, as recited in claim 2, wherein the first magnetic element is arranged in a ring shape having a first diameter and the second magnetic element is arranged in a ring shape having a second diameter different from the first diameter, and wherein the magnetic field lines passing from the first magnetic element to the second magnetic element pass through the confinement ring in a canted manner.

25. (Previously Presented) The plasma processing apparatus, as recited in claim 24, wherein the second diameter is greater than the first diameter.

26. (Previously Presented) The plasma processing apparatus, as recited in claim 2, wherein the first magnetic element is provided near the inner edge of the at least one confinement ring, and the second magnetic element is provided near the outer edge of the at least one confinement ring.